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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/708,186

02/13/2004

David Sutherland

45283.118

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22828 7590 12/22/2006  
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CANADA

EXAMINER

CANTELMO, GREGG

ART UNIT

PAPER NUMBER

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/22/2006

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/708,186	<b>Applicant(s)</b> SUTHERLAND ET AL.	
	<b>Examiner</b> Gregg Cantelmo	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>SEE OFFICE ACTION</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Priority***

1. Applicant's claim to U.S. Provisional Application Serial No. 60/319,949, filed February 14, 2003 is acknowledged.

### ***Information Disclosure Statement***

2. The information disclosure statements filed May 14, 2004 and October 18, 2004 have been placed in the application file and the information referred to therein has been considered as to the merits.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the compression plates must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

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of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 4-8 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 98/57384 (WO '384).

WO '384 discloses a planar solid oxide fuel cell stack 10 comprising a lower horizontal compression plate (not shown but inherent to impart the requisite compression described in WO '384), an upper horizontal compression plate (not shown but inherent to impart the requisite compression described in WO '384), a plurality of interleaved fuel cells 16, seals and interconnects 12, 14, a cathode current collector plate 22 and an anode current collector plate 18 disposed between the upper and lower compression plates, wherein the stack defines vertical fuel intake and exhaust manifolds and vertical air intake and exhaust manifolds, said stack comprising: (a) a seal element 34 having a cell opening; (b) a compressible, conducting element 42 disposed within the cell opening of the seal element 34; (c) wherein the seal element 34

and the compressible element 42 are disposed between the cathode current collector plate and a terminal interconnect at the cathode end of the stack or between the anode current collector plate 18 and a terminal interconnect 12 at the anode end of the stack, or both. (Fig. 2 as applied to claim 1).

Possible examples of the compressible means for use on the anode side of the fuel cell include a structure, such as a metallic corrugation or a porous metallic felt, which retains some resilience at the operating temperature; and a composite of a porous brittle material and a metal (page 4, ll. 24-27). A porous metallic felt is held to be identical to a metallic foam (as applied to claim 2).

The preferred metal is nickel (page 4, ll. 18-22 as applied to claim 3).

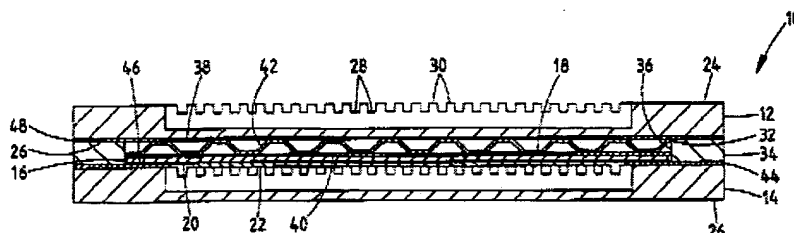
The seal element 34 defines an area where fuel passes from the intake manifold 54 such that fuel pass through and around compressible element 42 (Fig. 2 as applied to claim 4).

The interconnect 24 comprises flow directing ribs 30 in contact with an electrode surface and the conducting element 42 (Fig. 2 as applied to claim 5).

WO '384 discloses a planar solid oxide fuel cell stack having a compression plate (not shown but inherent to impart the requisite compression described in WO '384) and a terminal fuel cell (inherent to a fuel cell or stack of fuel cells), said fuel cell stack comprising: (a) a current collector plate 38 comprising a substantially planar element disposed immediately adjacent the compression plate 12; (b) an interconnect plate 40 disposed immediately adjacent and in electrical contact with the terminal fuel cell 16; (c) a compressible layer 42 comprising a compressible electrically conductive element

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42 in electrical contact with the interconnect plate 40 and the current collector plate 38 (Figs. 1 and 2 as applied to claim 6).



The compressible layer 42 comprises a sealing component 34 surrounding the compressible layer (Figs. 1 and 2 as applied to claim 7).

The compressible element 42 comprises nickel and the seal element 34 defines a fuel passage for diverting fuel from an intake manifold 54, through or around the compressible element and into a fuel exhaust manifold 56 (Fig. 2 as applied to claim 8).

Possible examples of the compressible means for use on the anode side of the fuel cell include a structure, such as a metallic corrugation or a porous metallic felt, which retains some resilience at the operating temperature; and a composite of a porous brittle material and a metal (page 4, ll. 24-27). A porous metallic felt is held to be identical to a metallic foam. The preferred metal is nickel (page 4, ll. 18-22 as applied to claim 9).

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,855,451 discloses providing a compressible nickel foam between interconnects and fuel cells.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
gc  
December 19, 2006

Gregg Cantelmo  
Primary Examiner  
Art Unit 1745